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ABSTRACT

Practicum experiences are thought to be a time for honing clinical skills and integrating content course material with clinical practice. Often, however, the range of clinical problems encountered during practica is restricted, limiting the variety of learning experiences available to practicum group members. To provide a wider range of standardized learning experiences, four computer simulations in the areas of agoraphobia, chronic headache pain, bulimia, and cocaine abuse were developed. Simulations were designed to replicate assessment, diagnostic, and treatment processes appropriate for community mental health centers, behavioral medicine clinics, university counseling centers, and substance abuse treatment centers. The simulations were field tested in four American Psychological Association approved doctoral training programs and a social work training program. The structured evaluation form assessed the students' opinions about the simulations. Results suggest that trainees learned how to integrate various methodologies and appeared to support the use of the behavior therapy computer simulations. Questions remain about the novelty effect of the simulations, effect on counselor performance, maximizing the learning process, and integration of computer simulations into behavior therapy training programs. (Author/ABL)

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COMPUTER SIMULATION UTILIZATION IN GRADUATE BEHAVIOR THERAPY TRAINING

Matthew E. Lambert, Deborah H. Lewis, Carol Pryor

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PAPER PRESENTED AT THE 35TH ANNUAL CONVENTION OF THE SOUTHWESTERN PSYCHOLOGICAL ASSOCIATION, APRIL 13-15, 1989, HOUSTON, TEXAS

ABSTRACT

Practicum experiences are thought to be a time for honing clinical skills and integrating content course material with clinical practice. Often, however, the range of clinical problems encountered during practica is restricted, limiting the variety of learning experiences available to practicum group members. To provide a wider range of standardized learning experiences 4 computer simulations were developed. The simulations portray problems of Agoraphobia, Chronic Headache Pain, Bulimia, and Cocaine Abuse. Evaluation of simulation use in 5 graduate training programs suggest that trainees learn to integrate various methodologies.

BACKGROUND

Behavior Therapy training involves the acquisition of assessment and treatment skills and the development of competencies in applying those skills. Assessment skills are often learned independently of treatment skills and are integrated within a "case management" framework during practicum experiences. This training approach tends to give behavior therapy (and other therapies using this training model) the appearance of being a discontinuous process.

Other disciplines, such as medicine, have faced similar problems with their training models. The increasing use of computer technology, specifically in the form of computerized "case management" simulations, however, has helped to overcome these problems. Such simulations have been developed to train professionals in medical patient management, educational diagnostic decision-making, behavioral management for special education settings, clinical audiology and speech pathology, clinical psychopharmacology, and psychdynamic therapy. Recently, a management simulation for behavior therapy training has been described. Following is a description of four such simulations and their initial application.

Behavior Therapy Simulations

Four simulations are available at this time, Mr.HOWARD, Mr. KOPF, Ms. BARNES, and Ms. MAYNE, representing symptoms of agoraphobia, chronic headache pain, bulimia, and cocaine abuse, respectively. The simulations were designed to replicate the behavioral assessment, diagnostic, and treatment processes appropriate for community mental health centers, behavioral medicine clinics, university counseling centers, and substance abuse treatment centers. The goal of each simulation is for the user to gain supervised experience with assessing, diagnosing, and treating typical client problems.

The simulations require any IBM-PC or compatible computer with graphics capabilities operating under PC/MS-DOS version 2.1 or later. A color monitor and printer are optional; however, their use will further enhance the display and provide the user with a printed copy of the users' decision-making sequence and a summary for each completed simulation.

Simulation Process

All case simulations, orienting materials, and instructions are presented on a microcomputer. First, users are presented with a textual orientation to the simulation task and its goals followed by a general description of the client's presenting complaint and a statement indicating that the client is waiting to be seen. The main menu is then presented offering options such as intake interview, assessment data, treatment options, and consultation/referral to other health care professionals. The user selects an option by pressing a key on the computer keyboard which in turn leads to additional sub-menus. Selecting items from sub-menus yields more specific information. For example, choosing specific assessment strategies yields a presentation of the assessment's results. The process of gathering information and providing treatment is similar for all options contained in the main menu. Some assessment and treatment options, however, may not provide sufficient or appropriate information. Users may encounter problems such as the client's unwillingness or inability to self-monitor the problem behavior. This challenges the user to explore various options in elucidating the client's problem.

Once the client's problems have been reduced by applying one or more designated treatment procedures, the user may conduct follow-up assessments to determine the extent of behavior change. Simulation termination after treatment leads to a simulation summary describing the important problem-solving options and the information those options provide. After the summary, users are presented, in sequence, a listing of the information gathered and treatment options chosen.

Use of Simulations in Teaching

As of this time the 4 simulations have been field tested in 4 APA approved doctoral training programs (Sites 1-4)and a social work training program (Site 5). At each site, the simulations were used in conjunction with either behavior therapy practica or theory courses. The simulations were scheduled to be completed outside of regular class periods and then discussed during supervisory/class sessions. After completing each simulation, students in both programs were asked to complete a structured evaluation form.

The structured evaluation form assessed the students' opinions about the simulations in five areas: (1) how closely the simulation content reflected their knowledge of behavior therapy, (2) how closely the simulation's branching options reflected their clinical decision making processes, (3) the simulation's utility for learning behavior therapy, (4) how the simulations compared to other behavior therapy training tools [e.g., case books], and (5) the usefulness of the simulation experience prior to practicum courses. All items were rated on a 5 point Likert scale, with a score of 1 representing a low rating and a score of 5 corresponding to a high rating.

Results & Discussion

Examination of the performance data for each simulation reveals that students accessed multiple measures and modalities when working with the simulated clients (see Tables 1-4). The multiple modalities selected for assessment and treatment reflected both traditional as well as behaviorally oriented case material. Thus, it appears that students using the simulations integrated a wide variety of assessment and treatment information when providing psychological services to the simulated clients.

With respect to the simulation evaluation questions (EV1-EV5), students at each of the field test sites felt the simulations adequately represented their knowledge of behavior therapy and provided a realistic analogue of the behavior therapy process (see Tables 1-4). The students also indicated that they felt the simulations were useful for learning behavior therapy, were equal or slightly better than some traditional training tools, and were useful preparation materials prior to practicum courses (see Tables 1-4). In summary, the results presented appear to support the use of the 4 behavior therapy computer simulations in graduate training.

Although students responded positively to the simulations as a learning experience, questions remain as to their ultimate efficacy as training tools. Since these programs represent the application of a new technology to behavior therapy training, one question that must be posed is how much of a novelty effect was involved in the students' usage patterns and their subjective evaluations. The issue underlying this question is whether the students actually learned about behavior therapy as a function of their simulation experiences. The data presented in this paper do not answer this question, and future research into case simulation use for behavior therapy training must address this issue. One method of evaluating student learning would be to compare various performance measures on students having access to case simulations during training and practica with performance measures on students lacking simulation experience during training and practica. Similarly, student performances on early simulations could be compared with performances on later simulations of equivalent difficulty.

If it can be shown that behavior therapy simulations can facilitate the learning process, a question arises over how to maximize their instructional potential. From the data presented, particularly the social work students' data, it appears that traditional assessment methods of interviewing and psychological testing were selected proportionately more often than were behavioral assessment areas--psychophysiological, cognitive, and motoric assessments. Unfamiliarity with these assessment areas was often cited in student comments as the reason for not choosing them. One goal of simulation based behavior therapy training, therefore, could be to facilitate exploration of behavioral assessment and treatment

methodologies and the subsequent integration of behavioral information into a conceptual or "case management" framework about psychological problems. Providing students an advance organizer that acquaints them with the different response modes mediating problem behavior could help their formulating such a framework. An advance organizer could take the form of an orienting discussion designed to give the student an awareness that psychological problems involve psychophysiological, cognitive, and behavioral components that can be directly assessed in addition to other components indirectly assessed through psychological testing and interviewing.

Another, somewhat broader question is also relevant. How should simulation training be integrated into behavior therapy training programs? When used in conjunction with methods courses, simulations can provide a means by which to apply abstract concepts directly. Students would not have to wait until practicum courses to begin applying what they learn. Moreover, specific simulations paralleling course content could be assigned as a way to reinforce course material. Having all students in a class complete the same simulations sequentially, could generate discussions which deal with specific issues relevant to selecting diagnostic assessments and subsequent treatments. In such discussions, all class members would have the same experiential base and would be in a position to contribute to, as well as learn from, the opinions of others. Simulation practice prior to practicum courses may also help orient students to the actual process of assessment, diagnosis, and treatment. This orientation to the behavior therapy process could help ease the transition often encountered by students as they begin thinking and behaving as behavior therapists.

Although computerized case simulations hold promise as important training tools, these issues should be addressed in future research if simulations are to be used to their fullest potential.

SIMN 1: MR. HOWARD
Number of Assessment and Treatment Options Selected, and
Evaluation Ratings for Each Test Site

Variables		Site 1	Site 2	Site 3	Site 4	Site 5
IHIS	Mean	6.92	9.00	8.06	5.60	9.00
	Stnd Dev	3.43	0.00	2.66	4.67	0.00
ABCINT	Mean	1.85	3.00	2.29	1.20	1.50
	Stnd Dev	1.52	0.00	1.31	1.64	2.12
PHYSAST	Mean	0.69	0.00	0.29	0.00	0.00
	Stnd Dev	0.85	0.00	0.59	0.00	0.00
COGAST	Mean	2.15	0.00	0.88	0.60	0.50
	Stnd Dev	1.95	0.00	1.22	1.34	0.71
MOTAST	Mean	1.38	1.00	0.00	0.00	0.00
	Stnd Dev	1.50	0.00	0.00	0.00	0.00
PSYMETS	Mean	1.15	0.00	1.65	0.80	1.00
	Stnd Dev	1.86	0.00	1.50	1.79	1.41
BEHINV	Mean	0.85	0.50	0.12	0.20	0.00
	Stnd Dev	0.80	0.71	0.33	0.45	0.00
DSM3CAT	Mean	0.31	0.00	0.00	0.00	0.00
	Stnd Dev	0.63	0.00	0.00	0.00	0.00
CONSULT	Mean	0.54	0.50	0.18	0.60	0.00
	Stnd Dev	0.97	0.71	0.53	0.89	0.00
REFERR	Mean	0.08	1.00	0.18	0.40	0.00
	Stnd Dev	0.28	0.00	0.53	0.55	0.00
DECISION	Mean	5.69	4.50	7.24	7.40	7.50
	Stnd Dev	4.75	2.12	3.13	5.13	2.12
ASTAFTER	Mean	2.23	0.50	1.41	1.00	0.00
	Stnd Dev	1.64	0.71	1.23	1.00	0.00
EV1	Mean	3.71	4.14	3.80	3.50	3.50
	Stnd Dev	0.49	0.38	0.84	0.58	0.71
EV2	Mean	3.43	3.57	2.60	3.50	4.00
	Stnd Dev	0.79	0.79	0.55	0.58	0.00
EV3	Mean	3.86	3.14	3.80	3.75	3.00
	Stnd Dev	0.90	0.90	0.45	0.50	0.00
	Cases	7.00	7.00	5.00	4.00	2.00
EV4	Mean	3.57	2.86	3.60	4.00	3.00
	Stnd Dev	0.98	0.90	0.89	0.82	1.41
EV5	Mean	3.57	3.00	3.60	4.00	3.50
	Stnd Dev	0.79	1.00	1.14	1.41	0.71

SIMN 2: MR. KOPF
Number of Assessment and Treatment Options Selected, and
Evaluation Ratings for Each Test Site

VARIABLES		Site 1	Site 2	Site 3	Site 4	Site 5
IHIS	Mean		9.00	7.14	5.56	9.00
	Stnd Dev		0.00	3.16	4.33	0.00
ABCINT	Mean		3.00	2.36	1.00	2.40
	Stnd Dev		0.00	1.28	1.50	1.34
PHYSAST	Mean		5.00	2.36	0.33	1.00
	Stnd Dev		0.00	1.98	0.71	1.41
COGAST	Mean		4.00	1.43	1.11	1.80
	Stnd Dev		0.00	1.65	1.97	1.79
MOTAST	Mean		3.00	0.43	0.00	0.20
	Stnd Dev		0.00	0.76	0.00	0.45
PSYMETS	Mean		3.00	2.29	0.11	3.60
	Stnd Dev		0.00	1.73	0.33	2.41
BEHINV	Mean		1.00	0.21	0.44	0.20
	Stnd Dev		0.00	0.43	0.88	0.45
DSM3CAT	Mean		0.00	0.21	0.00	0.00
	Stnd Dev		0.00	0.80	0.00	0.00
CONSULT	Mean		3.00	0.50	1.11	2.20
	Stnd Dev		0.00	0.76	1.27	1.64
REFERR	Mean		2.00	0.07	0.22	1.40
	Stnd Dev		0.00	0.27	0.44	1.14
DECISION	Mean		5.00	3.79	4.00	3.80
	Stnd Dev		0.00	1.05	1.12	0.84
ASTAFTER	Mean		4.00	2.21	1.33	0.60
	Stnd Dev		0.00	1.67	1.12	0.55
EV1	Mean		3.57	3.20	3.50	3.75
	Stnd Dev		0.79	0.84	1.00	0.96
EV2	Mean		3.57	3.20	3.25	3.25
	Stnd Dev		1.27	0.84	1.26	1.50
EV3	Mean		3.14	3.80	4.50	3.00
	Stnd Dev		0.69	1.10	0.58	1.41
EV4	Mean		2.86	3.60	3.75	3.25
	Stnd Dev		0.90	1.14	0.96	1.26
EV5	Mean		3.14	3.80	2.75	4.00
	Stnd Dev		1.07	0.45	2.06	0.82

SIMN 3: MS. BARNES
Number of Assessment and Treatment Options Selected, and
Evaluation Ratings for Each Test Site

Variables		Site 1	Site 2	Site 3	Site 4	Site 5
IHIS	Mean	5.64	7.33	3.00	7.08	9.00
	Stnd Dev	4.32	2.94	0.00	3.50	0.00
ABCIMT	Mean	1.82	2.20	0.00	1.67	1.00
	Stnd Dev	1.40	1.37	0.00	1.44	0.00
PHYSAST	Mean	1.36	2.33	0.00	0.17	0.00
	Stnd Dev	1.86	2.02	0.00	0.39	0.00
COGAST	Mean	1.27	0.80	0.00	0.33	1.00
	Stnd Dev	1.35	0.94	0.00	0.49	0.00
MOTAST	Mean	0.64	0.53	0.00	0.00	0.00
	Stnd Dev	1.03	0.83	0.00	0.00	0.00
PSYMETS	Mean	1.45	2.53	0.00	0.25	2.00
	Stnd Dev	2.25	1.73	0.00	0.45	0.00
BEHINV	Mean	0.45	0.60	0.00	0.25	0.00
	Stnd Dev	1.21	0.83	0.00	0.45	0.00
DSM3CAT	Mean	0.18	0.40	0.00	0.08	0.00
	Stnd Dev	0.60	1.12	0.00	0.29	0.00
CONSULT	Mean	0.82	0.20	0.00	0.50	0.00
	Stnd Dev	0.98	0.41	0.00	0.90	0.00
REFERR	Mean	0.00	0.13	0.00	0.42	0.00
	Stnd Dev	0.00	0.35	0.00	0.67	0.00
DECISION	Mean	3.45	5.13	3.00	4.58	6.00
	Stnd Dev	2.73	1.88	0.00	2.47	0.00
ASTAFTER	Mean	2.36	2.80	1.00	3.33	0.00
	Stnd Dev	1.80	2.31	0.00	2.31	0.00
EV1	Mean	3.86	4.00	3.40	3.50	4.00
	Stnd Dev	0.38	0.58	0.89	0.53	0.00
EV2	Mean	3.14	3.57	3.20	3.50	4.00
	Stnd Dev	0.69	0.53	1.10	0.93	0.00
EV3	Mean	4.14	3.00	3.60	4.13	3.00
	Stnd Dev	0.69	0.82	1.14	1.13	0.00
EV4	Mean	3.57	2.43	3.60	4.25	4.00
	Stnd Dev	0.98	0.98	1.14	1.04	0.00
EV5	Mean	3.57	3.14	3.60	3.71	4.00
	Stnd Dev	0.98	1.07	0.55	1.25	0.00

SIMN 4: MS. MAYNE
Number of Assessment and Treatment Options Selected, and
Evaluation Ratings for Each Test Site

Variables		Site 1	Site 2	Site 3	Site 4	Site 5
IHIS	Mean		8.00	6.43	5.86	9.00
	Stnd Dev		1.73	4.39	4.02	0.00
ABCIMT	Mean		2.33	1.00	3.00	0.00
	Stnd Dev		1.15	1.41	0.00	0.00
PHYSAST	Mean		0.67	0.00	0.00	0.00
	Stnd Dev		0.58	0.00	0.00	0.00
COGAST	Mean		1.00	0.14	0.57	0.00
	Stnd Dev		1.00	0.38	1.51	0.00
MOTAST	Mean		1.00	0.00	0.00	0.00
	Stnd Dev		1.73	0.00	0.00	0.00
PSYMETS	Mean		0.67	2.43	0.00	2.00
	Stnd Dev		1.15	1.72	0.00	0.00
BEHINV	Mean		0.67	0.14	0.43	0.00
	Stnd Dev		1.15	0.38	0.79	0.00
DSM3CAT	Mean		0.67	1.00	0.29	0.00
	Stnd Dev		1.15	1.91	0.49	0.00
CONSULT	Mean		1.67	0.29	0.57	0.00
	Stnd Dev		0.58	0.49	0.79	0.00
REFERR	Mean		1.67	0.29	0.14	0.00
	Stnd Dev		1.15	0.49	0.38	0.00
DECISION	Mean		6.67	6.14	6.43	7.00
	Stnd Dev		0.58	0.69	0.79	0.00
ASTAFTER	Mean		3.00	1.57	2.57	1.00
	Stnd Dev		1.00	1.27	2.07	0.00
EV1	Mean		3.71		3.50	
	Stnd Dev		0.76		1.05	
EV2	Mean		3.43		3.50	
	Stnd Dev		0.53		1.38	
EV3	Mean		3.43		4.00	
	Stnd Dev		0.79		1.55	
EV4	Mean		3.00		3.67	
	Stnd Dev		1.00		1.37	
EV5	Mean		3.14		3.40	
	Stnd Dev		1.22		0.89	